



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,295	08/27/2003	Tadashi Nakamura	SCEI 3.0-007 DIV	5470
530	7590	07/28/2005	EXAMINER	
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			JANKUS, ALMIS R	
			ART UNIT	PAPER NUMBER
			2672	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,295

Applicant(s)

NAKAMURA ET AL.

Examiner

Almis R. Jankus

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' amendment of 03/17/05 has been fully considered in preparing this Office Action.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-5, 8-12, and 15-19 stand rejected under 35 U.S.C. 102(b) as being anticipated by Potmesil et al.

With respect to claim 1, Potmesil et al. teach the claimed Z buffer operable to establish a depth direction of objects in an image, at page 107 and at page 99 figure 10; an image generator unit to generate an image in a just-in-focus state while writing a Z value of each of dots in the image into the Z buffer, at page 96 section 3.1 along with top of page 107; a blurring unit operable to produce a blurred image from the image in the just-in-focus state, at page 97 section 3.2; and an overwriting unit operable to selectively overwrite portions of the blurred image on the image in the just-in-focus state by comparing a preset Z value to the Z value of each of the dots in the Z buffer, at figure 10, at figures 12-14, and at pages 100-108.

Claim 2 further requires the preset Z value is changed arbitrarily and continuously with time such that an image field of the objects that are in the just-in-focus state is correspondingly changed. Potmesil et al. teach this at figures 12-14.

Claim 3 further requires the blurring unit is operable to produce reduced images and to magnify the reduced images to generate out-of-focus images. Potmesil et al. teach this at section 3.1.

Claim 4 further requires the blurring unit uses a pixel-interpolation algorithm to produce the reduced images. Potmesil et al. teach this at the last paragraph at page 96.

Claim 5 further requires the pixel-interpolation algorithm comprises a bilinear filter algorithm. Potmesil et al. teach this at the last paragraph at page 96.

Claims 8-12 and 15-19 are similar to claims 1-5 respectively, and are rejected under similar rationale.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6, 13 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Potmesil et al. as applied to claims 1, 8 and 15 respectively above, and further in view of Max et al.

Claims 6, 13 and 20 further require the overwriting unit to be operable to selectively mask objects corresponding to the preset Z value and to overwrite all unmasked objects with corresponding ones of the out-of-focus images such that objects located farther and nearer than the preset Z value are out of focus. While Potmesil et al. do not explicitly teach the claimed selective masking, it is noted that this feature is taught at Max et al. at page 85 second column, last paragraph, to page 86 first column first paragraph. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the mask feature because the same authors are

Art Unit: 2672

referenced as those referenced in the 102(b) rejections above.

7. Claims 7, 14 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Potmesil et al. as applied to claims 1, 8 and 15 respectively above, and further in view of Foley et al.

Claims 7, 14 and 21 further require a video random access memory (VRAM) having a rendering area and a texture area, wherein the blurring unit is operable to produce sequentially reduced images in the VRAM and to magnify the reduced images to generate a plurality of different levels of out-of-focus images. While Potmesil et al. do not explicitly teach the use of a VRAM, Foley et al. teaches this at pages 859-860. It would have been obvious to one of ordinary skill in the art to use a VRAM with the technique of Potmesil et al. because VRAMs provide an elegant solution to the frame-buffer memory-access problem. This rationale is provided at Foley et al. at page 860, last paragraph.

8. Applicant's arguments filed 03/17/05 have been fully considered but they are not persuasive.

At page 5 of the remarks, applicants argue that Potmesil et al. fails to teach a composite image; blurred images that are made from parts of an image in a just-in-focus state; and overwriting operation by considering depth direction of objects as claimed in claim 1. However, those features are not found in claim 1. Further,

Art Unit: 2672

applicants argue that Potmesil et al. does not produce a blurred image from the image in the just-in-focus state and overwrite portions of the blurred image on the image in the just-in-focus state by comparing a preset Z value to the Z value of each of the dots in the z buffer. However, Potmesil et al. teach the claimed just-in-focus image as the image using the pinhole camera model (all in focus); the blurred image generated by the focus processor; and overwriting portions of the blurred image on the image in the just-in-focus state by comparing a preset Z value to the Z value of each of the dots in the z buffer at figures 12a-d to 14a-d along with the associated parameters of table 1.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37.CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R. Jankus whose telephone number is 571-272-7643. The examiner can normally be reached on M-F, 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJ



ALMIS R. JANKUS
PRIMARY EXAMINER